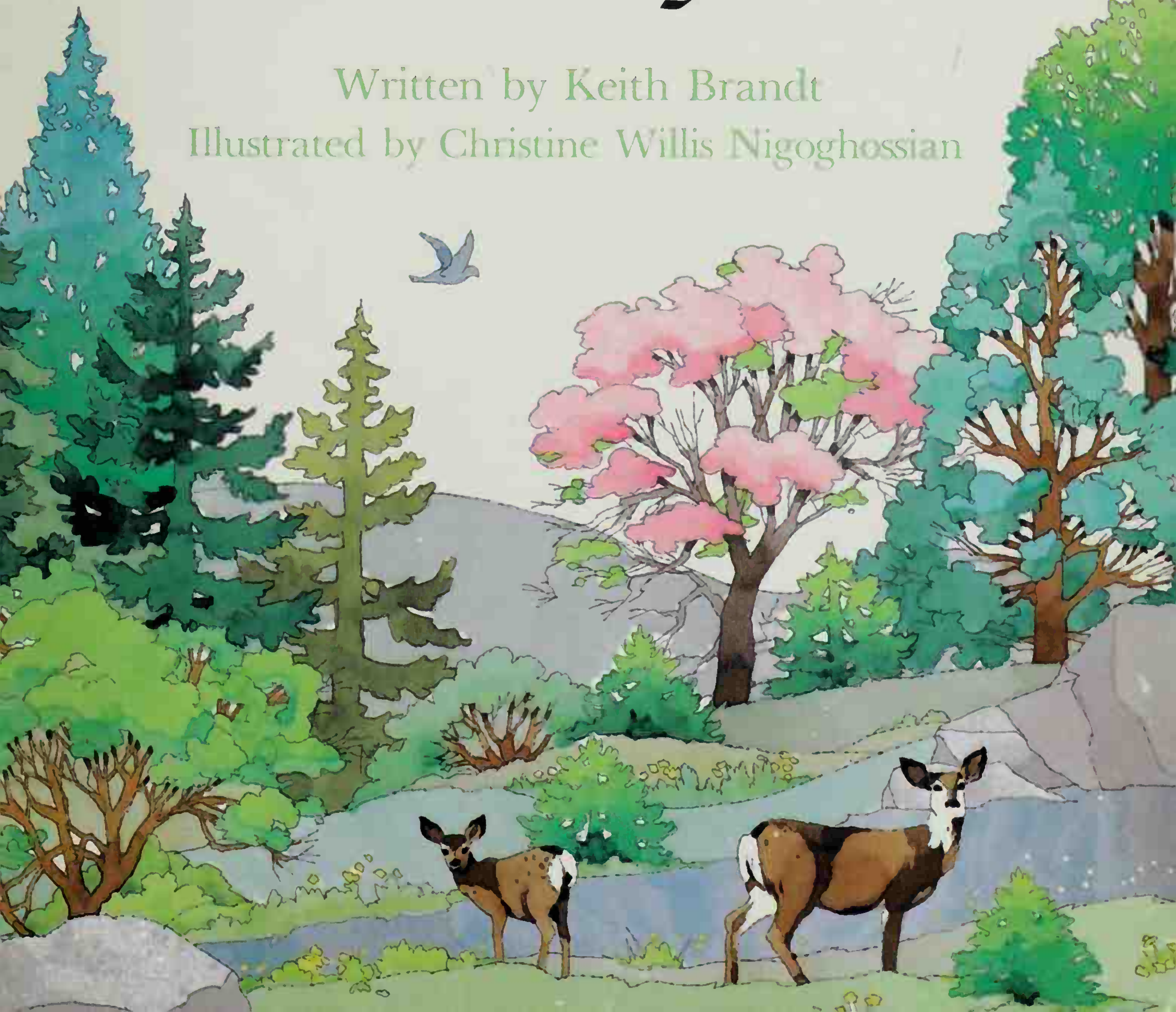
Discovering Trees

Written by Keith Brandt

Illustrated by Christine Willis Nigoghossian



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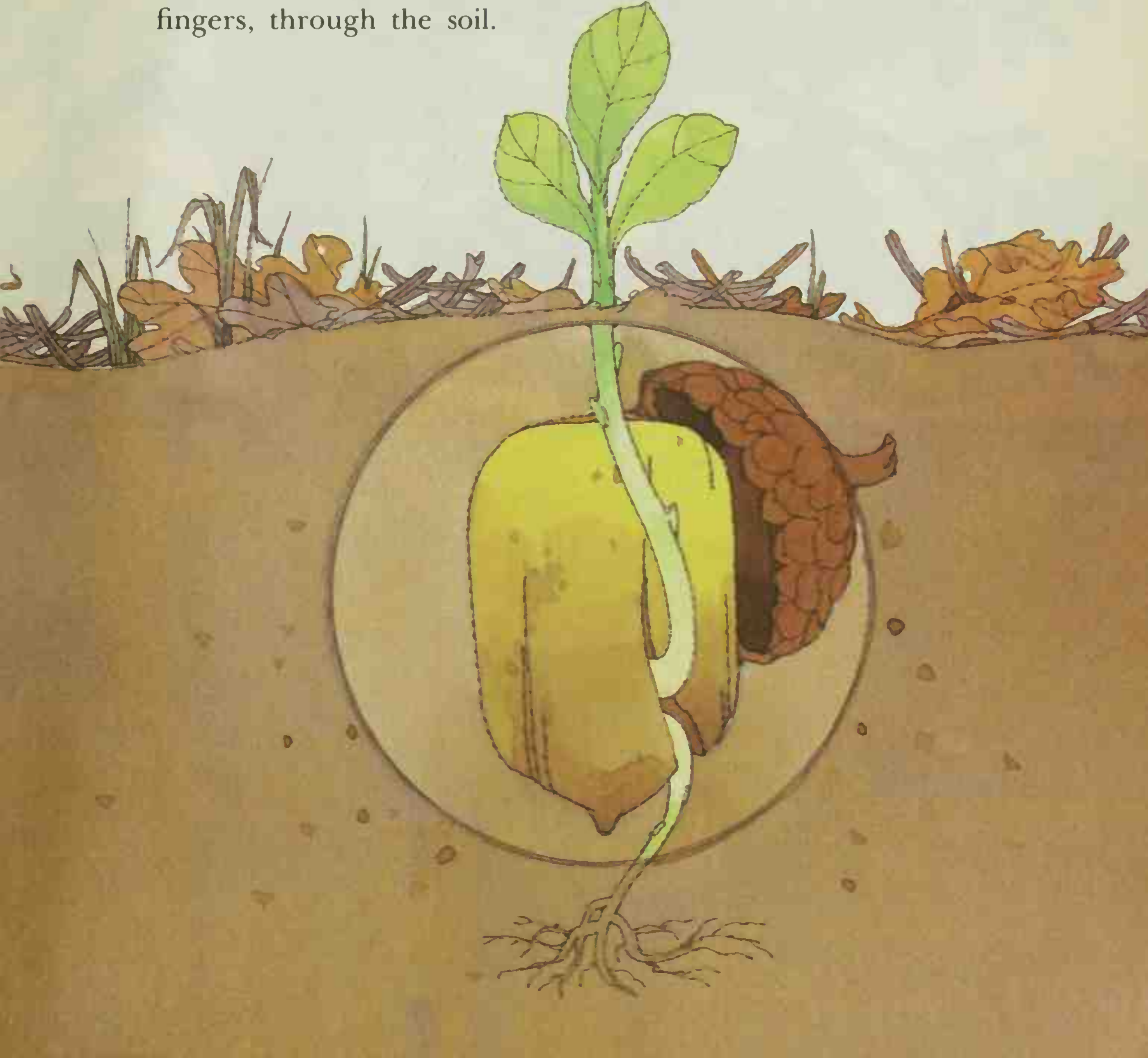
Did you ever look at a tree and wonder how it grew there? No matter what kind of tree it is, the answer is the same. It began life as a seed. Each kind of tree has its own kind of seed.

The seed of an oak tree is called an acorn. All through the summer months, acorns grow on the branches of the oak. When autumn comes and cool winds blow, the acorns drop to the ground.

A squirrel may find one of the acorns. He digs a hole in the ground and buries it. Then he scampers off to find more acorns to store in the ground. He will eat the acorns during winter, when other food is hard to find.

That winter, the squirrel digs up and eats most of the acorns. But he does not find the first one he buried. It lies beneath the cold ground all winter. In the spring, warm sun and rain make the acorn soft. The acorn opens slowly at one end. Soon two shoots grow out of the open end.

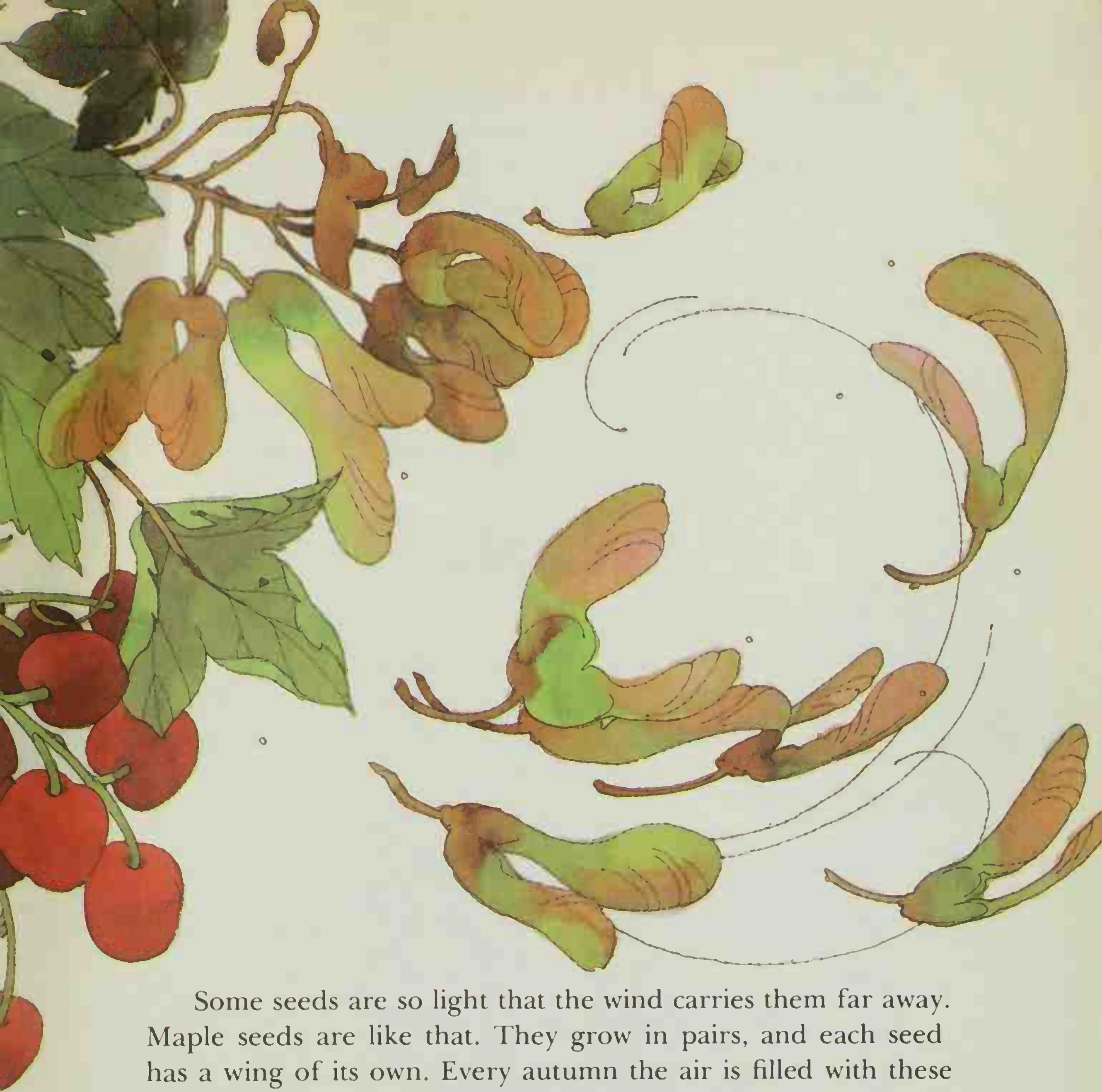
One shoot begins to grow up through the soil, reaching for sunlight. This will be the trunk of the new tree. The other shoot grows down into the soil. This one is called the tap root. The tap root holds the young oak firmly in the ground. Many smaller roots grow from the tap root. They spread, like thin fingers, through the soil.



The underground roots take water and mineral salts from the soil. The tree uses the water to make sap. The sticky sap flows to every part of the tree. It carries the mineral salts through tubes in the trunk and branches. These salts feed the tree, making it strong and healthy.

What happens to all of the acorns that fall from the big oak tree? Many of them are eaten by squirrels and birds. Some acorns are broken when they fall. Others land where there is no soil to grow in. Nature makes sure that only a few acorns take root and become new oak trees. If every acorn did take root, the world would be one huge forest.

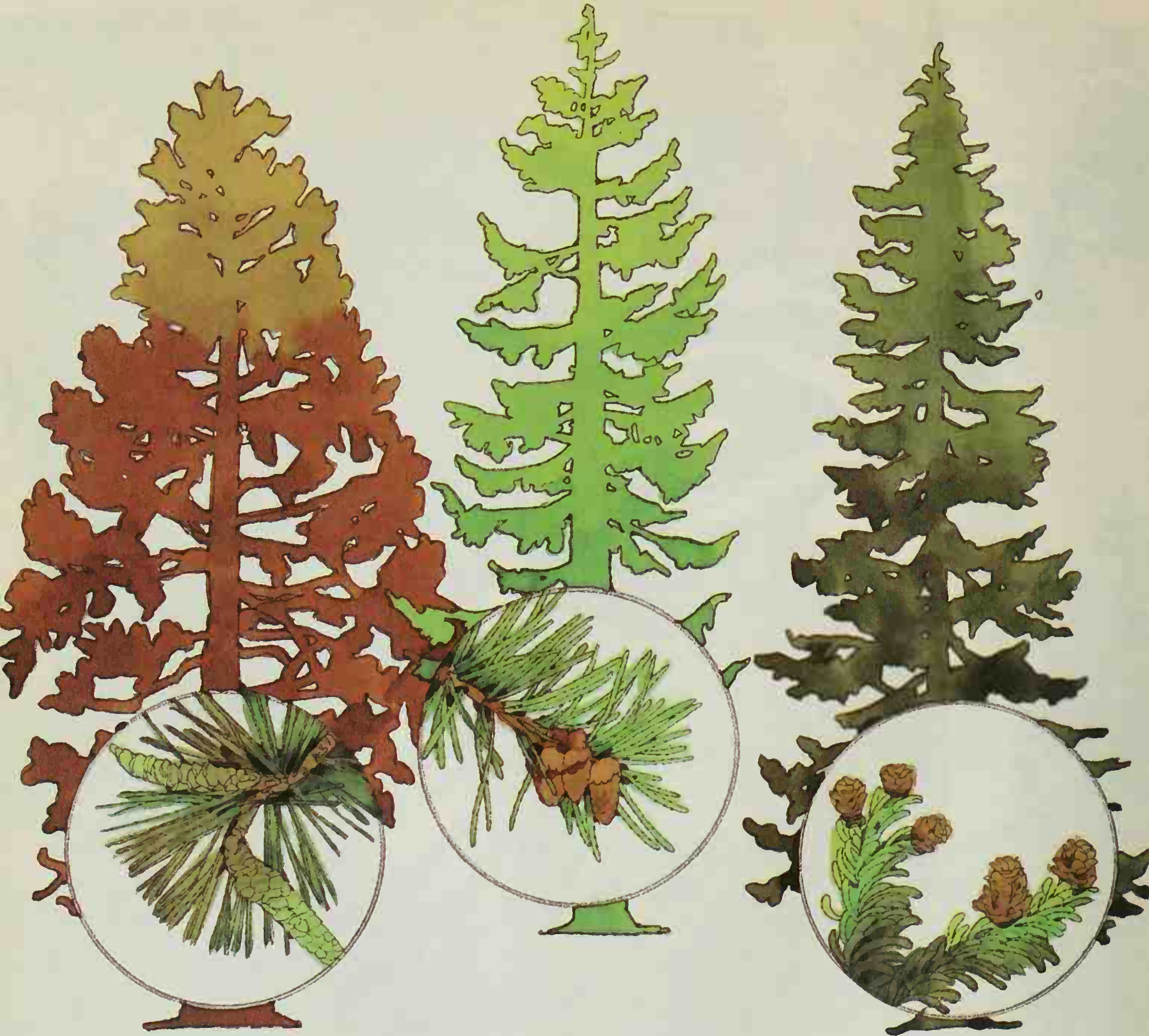
New trees often sprout into life far from their "mother" trees. Suppose a bird plucks a ripe cherry from a cherry tree and flies away. The bird is taking the cherry to a tree branch, where she will eat it. But the cherry drops from the bird's beak and falls to earth. When spring comes, the seed inside the cherry pit will take root and begin to grow.



Some seeds are so light that the wind carries them far away. Maple seeds are like that. They grow in pairs, and each seed has a wing of its own. Every autumn the air is filled with these twins whirling from tree branches to the earth. Some of these seeds will become baby maples next spring.

Taking a trip by water is another way young trees are born miles from their "mother" trees. A seed falls into a stream or is washed into a lake in a rainstorm. It floats far away. If it is washed onshore where the soil is good, the seed can become a tree.

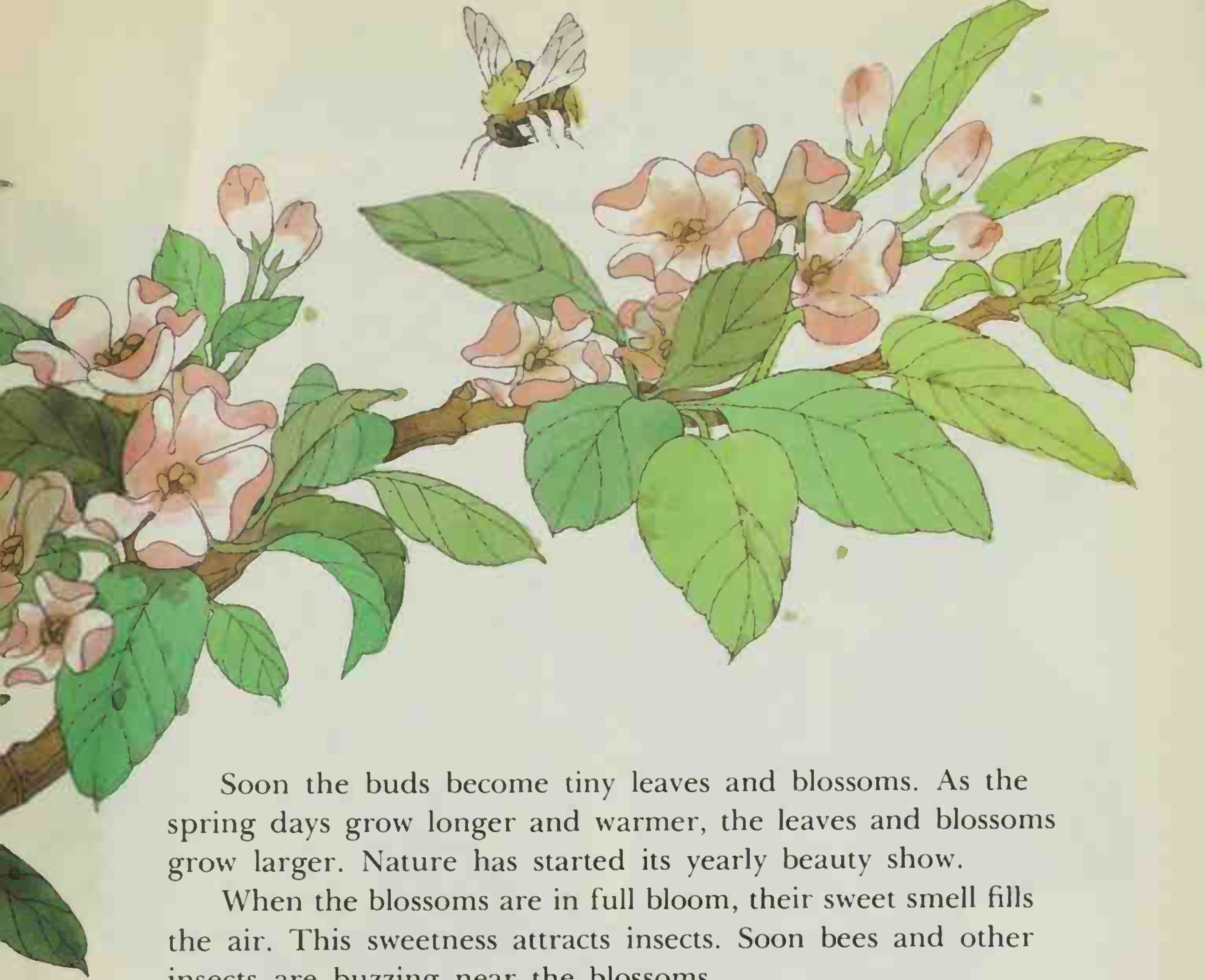
Trees are called plants because they have leaves, stems, and seeds. Grass and flowers are plants, too. But trees are different from grass and every other plant. Only trees have hard, wooden trunks.



All trees have leaves. Some trees—such as the pine, fir, and spruce—keep their leaves all year long. These trees are called evergreens. Other trees—such as the oak, maple, birch, and hickory—lose their leaves every autumn. They grow new leaves every spring. These trees are called deciduous (duh-*sid*-you-us).

It is exciting to see what happens to a deciduous tree every year, as it goes through each of the four seasons.

In the early spring, this apple tree has small, closed buds on every branch. The buds are about to wake up after a long winter sleep. The buds have hard covers that protect them from the ice and winds of winter. Now these covers fall off, and the buds slowly open.



Soon the buds become tiny leaves and blossoms. As the spring days grow longer and warmer, the leaves and blossoms grow larger. Nature has started its yearly beauty show.

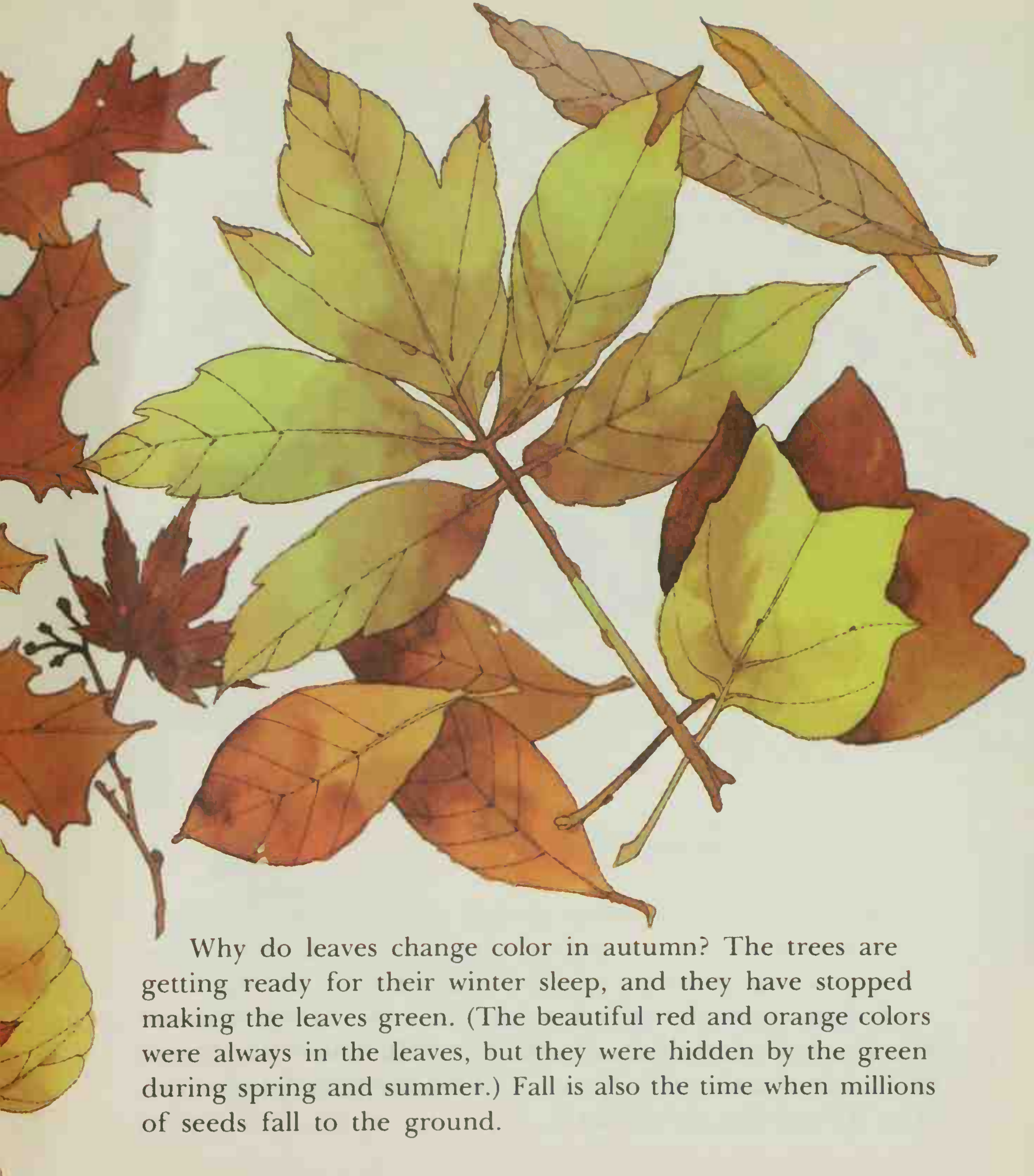
When the blossoms are in full bloom, their sweet smell fills the air. This sweetness attracts insects. Soon bees and other insects are buzzing near the blossoms.

The insects eat the sweet-smelling "food" in the center of each flower. This sticky "food" is called pollen. Some of the pollen sticks to the legs and heads of the insects. When one of the insects flies to another apple blossom, some of the pollen rubs off. These grains of pollen will join with tiny egg cells in this blossom. That is the beginning of an apple. It is called fertilization.

In the summer, the apple will grow larger and larger. At last, in the autumn, it will be ready for eating.

The tree has been busy all summer long. While you have watched green leaves and apples grow, the tree was also storing food in its trunk and roots, and getting fresh buds ready for next spring. Trees do all this work in the summer, because they will be sleeping during the frosty winter months.

Deciduous trees, such as the oak or the maple, are most colorful in the autumn. Their leaves turn from green to red, orange, yellow, and many other colors.



Why do leaves change color in autumn? The trees are getting ready for their winter sleep, and they have stopped making the leaves green. (The beautiful red and orange colors were always in the leaves, but they were hidden by the green during spring and summer.) Fall is also the time when millions of seeds fall to the ground.

Autumn's rainbow of colors lasts just a short time. Even as we admire the beautifully colored leaves, deciduous trees begin to shed their leafy coats. It is as if Nature has posted a sign that says, "Closed for the winter."

When spring returns with its warm rains, the trees will awaken and once again dress up the land in bright green.

Some trees will not live through the harsh winter, but many of the seeds that fell in autumn will take their place and begin lives of their own. New oaks and maples . . . new birches and weeping willows . . . new elms and sycamores—they will all grow in the spring.

Evergreen trees start life as seeds, just the way deciduous trees do. But because evergreens never really sleep during winter, they do not lose all their needles—or leaves—at once.

Another difference between deciduous trees and evergreens is that most evergreen seeds grow inside cones. That is why evergreens are called *coniferous* (koh-*nif*-er-us), which means "cone-bearing." Three kinds of evergreens that have cones are the fir, the pine, and the spruce.

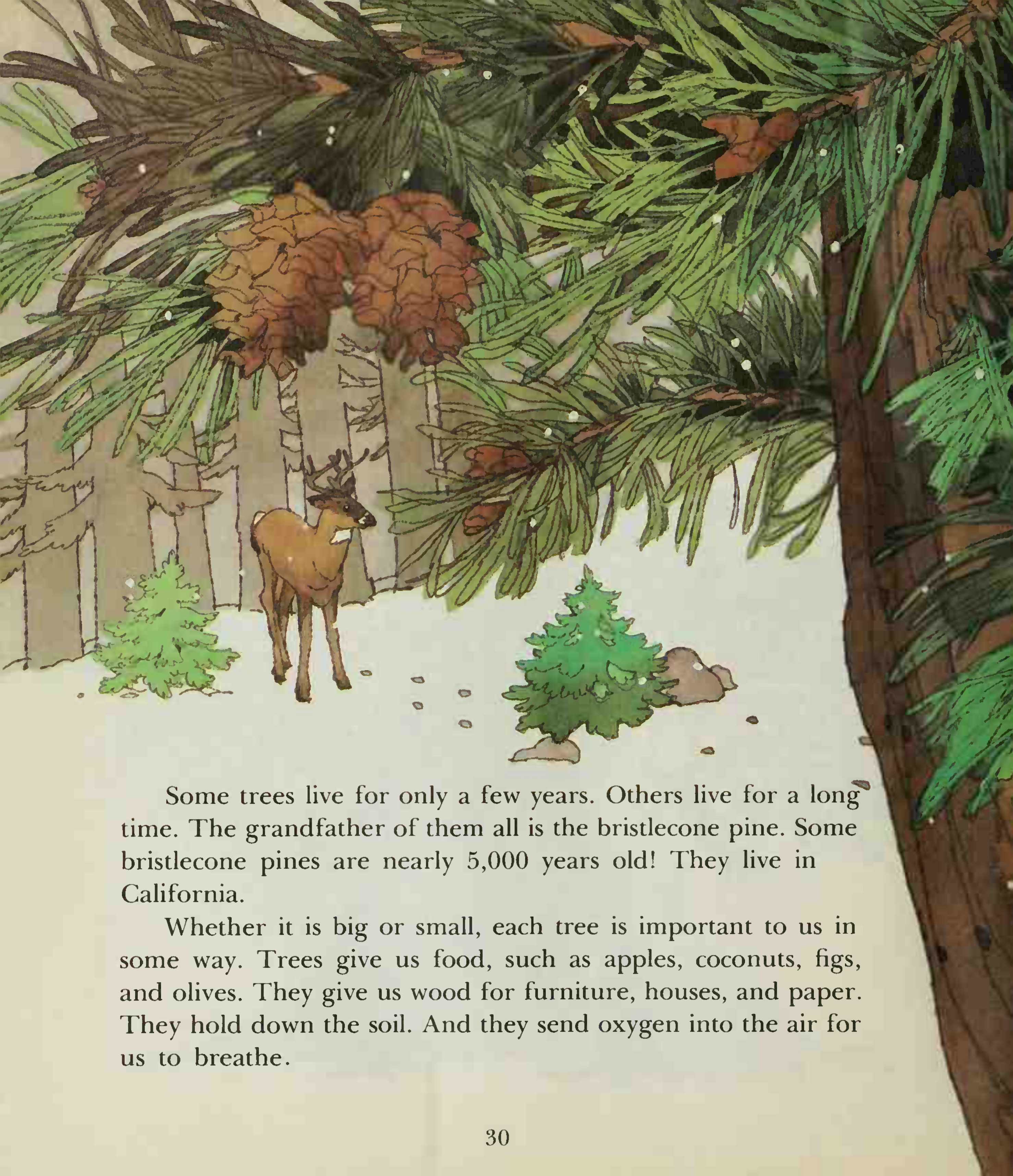
Evergreen cones come in many shapes and sizes. But all cones are hard. The hard shell protects the seeds growing inside.

Some evergreens do not have cones. Their seeds grow inside berries. Two kinds of evergreens that grow berries are the holly and the juniper.

Every tree, whether it is evergreen or deciduous, has a kind of life plan. From the moment it is born, the tree follows this plan. For example, every oak has a plan that makes it grow to a certain size and bear acorns. And every acorn holds the same plan as the "mother" tree on which it grew.

There is a type of seed that can grow up to be one of the tallest trees in the world. That tree is the giant redwood. Its height can reach 368 feet, or 110 meters.

Another type of seed can grow up to be one of the shortest trees in the world. That is the smoke tree. Its average height is just 15 feet, or 4.5 meters.



Some trees live for only a few years. Others live for a long time. The grandfather of them all is the bristlecone pine. Some bristlecone pines are nearly 5,000 years old! They live in California.

Whether it is big or small, each tree is important to us in some way. Trees give us food, such as apples, coconuts, figs, and olives. They give us wood for furniture, houses, and paper. They hold down the soil. And they send oxygen into the air for us to breathe.

But, best of all, trees give us a gift of beauty—a gift that grows from a tiny seed.

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